Calendar No. 787

101ST CONGRESS
2d Session

SENATE

REPORT
101-433

THE STEROID TRAFFICKING ACT OF 1990

AUGUST 30, 1990.—Ordered to be printed

Filed under authority of the order of the Senate of August 2 (legislative day, July 10), 1989

Mr. BIDEN, from the Committee on the Judiciary, submitted the following

REPORT

[To accompany S. 1829]

The Committee on the Judiciary, to which was referred the bill (S. 1829), having considered the same, reports the bill, as amended, and recommends that the bill do pass.

CONTENTS

	Page
I. Purpose	1
II. Legislative history	2
III. Discussion	3
A. Steroids: A half-million high school users	4
B. Physical effects of steroids	5
C. Steroids and aggression: A deadly mix	5
D. Steroids are addictive	7
E. The failure of current efforts to fight steroid abuse	9
IV. Vote of the Committee	10
V. Text of S. 1829, as reported	10
VI. Section-by-section analysis	12
VII. Cost estimate	15
VIII. Regulatory impact statement	16
IX. Changes in existing law	16
X. Appendix: Committee hearings	21

I. PURPOSE

The purpose of the proposed legislation is to amend the Controlled Substances Act to further restrict the use of steroids. By designating anabolic steroids as a schedule II controlled substance, the bill would crack down on illegal steroid use in four ways:

39-010

S523-17

(1) it would increase steroid trafficking penalties to match the penalties for selling cocaine and other dangerous drugs;

(2) it would impose tight record-keeping and production control regulations to prevent the diversion of legally produced steroids into the illicit market;

(3) it would give the Drug Enforcement Administration the authority and responsibility to investigate violations involving the illegal production, distribution, or possession with intent to distribute steroids; and

(4) the bill would require U.S. demand reduction agencies to incorporate steroids in all federally supported drug abuse prevention, education, and treatment programs.

This legislation would also amend the Food, Drug, and Cosmetic Act to restrict the illegal distribution of human growth hormone which is chemically distinct from steroids.

II. Legislative History

Senators Biden, Simon, and Levin introduced S. 1829, the Steroid Trafficking Act of 1989, on November 1, 1989. This legislation was the result of a year-long investigation by the committee into the problem of steroid abuse in America. S. 1829 builds on the provisions authored by Senator Biden in the Anti-Drug Abuse Act of 1988, which made the illegal sale of steroids a felony, punishable by 3 years imprisonment.

Despite enactment of the steroids provisions in the 1988 drug bill, illegal steroids trafficking remains a major drug problem in the United States. In one blatant example, a Mexican firm, United Pharmaceuticals of Mexico, mailed a solicitation to U.S. citizens giving them directions to a hotel across the border where they could go to buy steroids. The company urged its customers to "tell your friends that here in Mexico there is no prescription necessary to obtain steroids." To crack down on steroid trafficking through the mails, Senator Biden introduced S. 466 on February 28, 1989. S. 466 makes the distribution of steroids through the mail a criminal offense. By adding steroids to schedule II of the Controlled Substances Act, S. 1829 would incorporate the prohibition on steroids shipments through the U.S. mail as proposed in S. 466.

The committee held 2 full days of hearings on the problem of steroid abuse, focusing on the problem of steroid abuse in amateur and professional sports. Chairman Biden convened the first hearing at the University of Delaware, in Newark, DE, on April 3, 1989. The hearing featured testimony from world-class athletes Evelyn Ashford, Diane Williams, and Pat Connolly, Ashford's coach and a former U.S. Olympian. According to two-time Olympic gold medalist Evelyn Ashford, approximately 50 percent of the female medalists in the 1988 summer games used steroids. Her desire to be No. 1 led Diane Williams, former U.S. national champion and winner of the bronze medal in the 1983 world championship in the 100 meters, to use steroids from 1981 to 1984. Now steroid-free, Diane Williams' testimony included stories of physical and mental anguish associated with her steroid abuse.

Testimony from a panel of sports medicine experts reinforced the evidence of steroid use among amateur and professional athletes

and warned the committee about the adverse physical and psychological effects linked to steroid use. Dr. Charles Yesalis, a professor at Pennsylvania State University and a leading expert on the prevalence and consequences of steroid abuse, testified about the behaviors, attitudes, and perceptions—consistent with psychological dependence—exhibited by a significant percentage of high school athletes who use steroids. The committee also heard testimony regarding the strong connection between steroid abuse and psychiatric disorders from Dr. David Katz, recognized as one of the leading medical experts on the psychological effects of steroid use. Dr. Katz warned in his testimony that individuals should pay special attention to the phenomenon of steroid use and psychotic episodes, depression, and mania.

Other witnesses at the hearing included: Dr. Edward Langston, American Medical Association; Pat Croce, conditioning trainer for the Philadelphia 76ers and the Philadelphia Flyers; Mike Quick, captain and all-pro receiver with the Philadelphia Eagles; Otho Davis, head trainer for the Philadelphia Eagles and executive director of the National Athletic Trainers Association; and Dorothy Baker, Delaware representative to the Executive Board of State Chairmen of the U.S. Olympic Committee.

The second hearing on steroids, held on May 9, 1989, in Washington, DC, featured testimony from representatives of professional and college football. Recognized as a sport plagued by alarming levels of steroid use, football has always favored those players that are bigger, bulkier and more aggressive than their opponents. According to Bill Fralic, three-time all-pro offensive lineman and National Football League player representative for the Atlanta Falcons, the pressure to gain that competitive edge begins in high school and is the start of a vicious cycle.

Pete Rozelle, outgoing commissioner of the NFL, testified on the NFL's effort to combat steroid abuse among its players. College football coaches also told of their efforts to prevent steroid use among their players. Bo Schembechler, head football coach and athletic director at the University of Michigan, spoke of his support for random, unscheduled testing, while Joe Paterno, head football coach at Penn State University, admitted that "we are now finding ourselves with a disease that is spreading." The hearing also featured testimony from: Jay Moyer, NFL executive vice president; Chuck Noll, head coach, Pittsburgh Steelers; Joe Purzycki, head coach, James Madison University; Harold Raymond, head coach, University of Delaware; and Marty Schottenheimer, head coach, Kansas City Chiefs.

III. Discussion

Anabolic steroids are synthetic derivatives of the male sex hormone testosterone. Technically referred to as androgenic-anabolic steroid, steroids occur naturally in the human body and are essential in the normal physiological processes of men and women. Androgens are hormones responsible for the development of male sex characteristics, including the growth of facial hair and the deepening of the voice. The term "anabolic" refers to the constructive or

building process of tissue. For the purposes of this report, the term "steroid" shall refer to androgenic-anabolic steroid.

Although androgenic-anabolic steroids have been approved for the treatment of numerous medical conditions, including hypoganadism, certain anemias, breast cancer and angioedema, they remain the least prescribed and the least studied of the steroid hormones.[1]

A. STEROIDS: A HALF-MILLION HIGH SCHOOL USERS

Steroid abuse has become a major drug abuse problem in America. As many as 1 million Americans or more have used or are currently using steroids for nonmedical purposes, primarily to increase athletic performance and improve physical appearance.[2]

Most disturbing, however, is the widespread steroid abuse among high school students and other young people. *Steroid abuse by male high school seniors is nearly as widespread as the use of "crack" cocaine.* The most complete study of this subject found that the number of male high school seniors who had used steroids within the previous 30 days was 75 percent of the number of male seniors who had used crack within the last month.[3] Another nationwide study of 12th grade male students found that 6.6 percent had used steroids.[4]

Taken together, these studies suggest that up to 500,000 male high school students use, or have used, steroids. Worse still, more than one-third of the users began using steroids at the age of 15 or younger; two-thirds had started by the age of 16. And the phenomenon is not limited to any one part of the country. Recent reports from Michigan, Texas, and Arkansas have all found that 5 to 11 percent of high school males admit to having used steroids.[5] These four studies also concluded that 1 to 2 percent of high school girls reported steroid use.

The severity of the steroid abuse problem among young people is compounded by the extremely high percentage of "hard-core" steroid users. Approximately 40 percent of steroid users can be considered "hard-core" users.[6] More than 90 percent of the anabolic steroid users who began at age 15 or younger are repeat-steroid users. "Stacking"—or the simultaneous use of different steroids—is a popular and dangerous pattern of steroid use among teenagers. 44 percent of the high school student users take more than one steroid at a time, and almost two out of five have used both oral and injectable steroids.[7]

---

[1] William N. Taylor, *Hormonal Manipulation: A New Era Of Monstrous Athletes* (Jefferson, North Carolina: McFarland & Co., Inc., 1985), p. 10.

[2] William N. Taylor, "Synthetic Anabolic-Androgenic Steroids: A Plea for Controlled Substance Status," *The Physician and Sportsmedicine* 15: 5 (1987): 140–150; and L.N., Burkett and M.T. Falduto, "Steroid Use By Athletes in a Metropolitan Area," *The Physician and Sportsmedicine* 12 (1984): 69–74.

[3] National Institute on Drug Abuse, "Monitoring the Future Study," 1989.

[4] William E. Buckley et al., "Estimated Prevalence of Anabolic Steroid Use Among High School Seniors." *Journal of the American Medical Association* 260 (December 1988): 3441.

[5] M. Johnson et al., "Anabolic Steroid Use in Adolescent Males." *Pediatrics* (in press); and R. Windsor and D. Dimutru, "Anabolic Steroid Use In Adolescents: Survey," *Medical Science Sports Exercise* (in press); and M. Newman, "Michigan Consortium of Schools Student Surveys," Minnesota: Hazelden Research" Services, 1986, as cited in Charles E. Yesalis, J.E. Wright and J.A. Lombardo, "Anabolic-androgenic Steroids: A Synthesis of Existing Data and Recommendations for Future Research, *Clinical Sports Medicine* 1 (1989): 109–134.

[6] Buckley, p. 3443. For purposes of this report, a "hard-core" user is someone who cycles five or more times, with each cycle lasting 6 to 12 weeks.

[7] Ibid.

B. PHYSICAL EFFECTS OF STEROIDS

Teens take steroids because they "work." [8] As medical experts now concede, steroids are effective in promoting muscle growth, although early denials of this fact,[9] unfortunately, have discredited subsequent warnings issued by medical experts about the serious physical and psychological consequences of steroid use. This has been a deadly mistake.

The abuse of steroids has been associated with serious physical disorders. Steroids have been linked to fatal liver and kidney failure.[10] An increased risk of cardio-vascular disorders is also associated with steroid use due to the drug's effect on the balance of high density and low density lipoprotein (HDL/LDL), which result in increased cholesterol levels and high blood pressure.[11]

Changes in sexual characteristics and reproductive functions are common in both female and male athletes who take steroids.[12] Common in female athletes who take steroids are menstrual irregularities, shrinkage of the breasts, increased facial hair, male-pattern baldness, deepening of the voice, and clitoral enlargement.[13] The last four effects in women tend to be irreversible.

In men, steroids reduce the production of luteinizing hormone and follical-stimulating hormone by the pituitary. This can lead to lower levels of circulating testosterone, testicular atrophy, oligospermia (low sperm count), and infertility.[14]

Prolonged steroid use may be particularly harmful to young people. Premature fusion of the long bones from steroids use can result in stunted growth in adolescents and preadolescents.

In sum, the evidence is clear: steroids are dangerous drugs that can permanently disfigure young users—and, in some cases, can take young lives.

C. STEROIDS AND AGGRESSION: A DEADLY MIX

In our society, which is filled with images of beauty, flawlessness, and excellence, steroids hold the promise of perfection. The promise is shattered, however, when individuals are faced with the brutal reality of steroid abuse: steroids not only cause physical damage but can cause severe psychological disorders. Attempting to strengthen the body, a steroid user can destroy the mind.

The psychological effects associated with steroid abuse include increased aggression, violent episodes, paranoia, depression, and

---

[8] Charles E. Yesalis, J.E. Wright, and J.A. Lombardo, "Anabolic-Androgenic Steroids: A Synthesis of Existing Data and Recommendations for Future Research, *Clinical Sports Medicine* 1 (1989): pp. 109–134.

[9] L.A. Golding, J.E. Freydinger and S. S. Fishel, "Weight, Size and Strength—Unchanged With Steroids," *The Physician and Sportsmedicine* 2 (1974): 39–43.

[10] Gary I. Wadler and Brian Hainline, *Drugs and the Athlete: Contemporary Exercise and Sports Medicine* (Philadelphia: F.A. Davis Co., 1989), p. 65, and John R. Bierly, M.D. "Use of Anabolic Steroids by Athletes: Do the Risks Outweigh the Benefits?" *Postgraduate Medicine* 82 (September 1, 1987): 72.

[11] Bierly, ibid. p. 74.

[12] Robert E. Windsor and Daniel Dumitru, "Anabolic Steroid Use By Athletes: How Serious Are the Health Hazards?" *Postgraduate Medicine* 84 (September 15, 1988): 49, and William P. Morgan, ed., "Erogenic Aids and Muscular Performance" (New York: Academic Press, 1972), p. 381, and Terry Todd, "The Steroid Predicament," *Sports Illustrated* 59 (August 1, 1983): p. 71.

[13] Bierly, ibid. p. 74.

[14] Bierly, ibid. p. 72, and Richard H. Strauss, MD., et al., "Side Effects of Anabolic Steroids in Weight-Trained Men," *The Physician and Sportsmedicine* 11: 12 (December 1983): p. 93, and Windsor, p. 47, and Morgan, p. 381.

hallucinations.[15] Despite the drastic and sometimes immediate psychological effects of steroid abuse reported by athletes, very few of these side-effects have been adequately researched.

Countless steroid users, however, provide anecdotal accounts of "roid rages"—the increased aggression and irritability associated with steroid use.[16] Numerous accounts of increased aggression and violence by steroids users have been reported:

> Glenn Woolstrum, a former deputy sheriff in Clackamas County, Oregon, was obsessed with weight lifting. Woolstrum took three steroids at the same time: anavar, testosterone, and dianabol. Although Woolstrum was known by many to be a pleasant, gentle man, overnight his personality became aggresive and violent. When Woolstrum asked a store owner if he could use her phone, the owner replied, "I should charge all you cops using this phone. You come in here all the time." The next day, angered by the store owner's remark, Woolstrum went back to the store, ordered her into his car at gunpoint and shot her. Today Leslie Myers, the owner of the store, is paralyzed for life.[17]
>
> At age 13, Mike Keys began weight lifting to build his slender frame. By age 17, Mike Keys stood 5'9", weighed 193 pounds, and injected himself daily with testosterone obtained from the local gym. Never satisfied with the results, Mike continued to take steroids, despite pleas from his family to stop. His grades began to slip, he threw temper tantrums, and his mood swings worsened. According to his parents, on the morning of December 16, 1988, Mike was fine, even cheerful. That evening Blaine Keys discovered his son's body lying next to his weight-lifting equipment—dead from a suicide.[18]

At Harvard Medical School, Dr. Harrison G. Pope, Jr., an associate professor of psychiatry, and Dr. David L. Katz, a psychiatrist, conducted one of the leading scientific studies on mental disorders associated with steroid use.[19] Of the 41 bodybuilders and football players studied, approximately one-third suffered mild to severe forms of mental disturbances. All 39 men and 2 women used steroids, usually obtained from the black market. The researchers concluded that "major psychiatric symptoms may be a common adverse effect of these drugs."[20]

More than 10 percent of Pope's and Katz' subjects experienced psychotic symptoms, and approximately 25 percent of the athletes

---

[15] Todd, p. 71, and Jodie Slothower, "Mean Mental Muscles: The Psychological Price of Steroids," *Health*, January 1988, p. 20, and Taylor, "Steroid Use Among Health Club Athletes," p. 158; Bierly, p. 71; Strauss, "Side Effects of Anabolic Steroids in Weight-Trained Men," p. 93; Taylor, *Hormonal Manipulation*, p. 16; Wadler, p. 66; Windsor, p. 47; and Betsy Carpenter, "A Game of Cat and Mouse: There's a New Olympic Event Pitting Athletes Against Drug Busters," *U.S. News & World Report*, October 10, 1988, p. 38.

[16] W.J. Annitto and W.A. Layman, "Anabolic Steroids and Acute Schizophrenic Episode," *Journal of Clinical Psychiatry* 41 (1980): 143; and Montgomery Brower and Carol Azizian, "Steroids Build Mike Keys Up; Then They Tore Him Down," *People*, March 20, 1989: pp. 107–108.

[17] Sixty Minutes, CBS News, "Beefing Up The Force," November 5, 1989.

[18] Brower and Azizian, ibid. p. 108.

[19] Harrison G. Pope, Jr., and David L. Katz, "Affective and Psychotic Symptoms Associated With Anabolic Steroid Use," *The American Journal of Psychiatry* 145 (4) (1988): 487–90.

[20] Terrence Monmaney with Kate Robins, "The Insanity of Steroid Abuse: The Drug Can Give Athletes Major Mental Problems," *Newsweek*, May 23, 1988, p. 75, quoted in Harrison G. Pope, Jr., and David L. Katz, "Affective and Psychotic Symptoms Associated With Anabolic Steroid Use," *The American Journal of Psychiatry* 145 (4) (1988): p. 487.

experienced manic symptoms, including an inflated self-esteem, recklessness, and a feeling of invincibility. Dan, an obsessed steroid user who went from 140 pounds to 270 pounds in 3 years, borrowed $1,500 from the bank to support his steroid habit. Convinced he was immortal, he drove a car at 40 mph into a tree, while a friend videotaped him. Since giving up steroids, Dan's destructive urges have disappeared.

Dr. William Taylor, in his study of the psychological alterations associated with anabolic steroid use, argues that the psychological damage continues even after steroid use has stopped. According to Taylor:

> There is no doubt that the use of anabolic steroids, even in low doses, potentiates certain psychological behavior in men. And with men athletes who are using moderate and larger doses of anabolic steroids, total personality changes may take place, both while on the anabolics and after the anabolics are stopped.[21]

And a yet-to-be-released study—the only controlled study of personality disorders among steroid users ever conducted—will demonstrate that steroid users, like alcoholics have an increased risk of developing personality disorders.[22] Steroid users experience frequent episodes of depression, anxiety, and hostility during cycles of steroid use.

D. STEROIDS ARE ADDICTIVE

The leading study of the addictive nature of steroid dependence cites the following four symptoms: (1) loss of control; (2) continued use despite adverse consequences; (3) tolerance; and (4) withdrawal.[23] Almost every leading expert in the field agrees: steroids are addictive.

In one case a 24-year-old noncompetitive weight lifter sought professional help for his dependence on anabolic steroids.[24] After a year of anabolic steroid use, the patient suffered from severe mood swings and temper outbursts. Two weeks before he was admitted to a hospital emergency room, the man separated from his wife of 5 years. The night before his admission, he had thoughts of suicide. When he attempted to stop taking anabolic steroids, he became depressed and weak; his craving for the "high" he felt when he took the drug was unbearable. After 5 days at the hospital, the man signed out against medical advice.

The perception by the user of anabolic steroids that the drug enables them to become stronger and bulkier is a key element of anabolic steroid dependence. And part of the difficulty in quitting the steroids habit is that users think they look better and perform better when they take the drug.[25] According to leading experts, the

---

[21] Taylor, *Hormonal Manipulation*, p. 16.

[22] W.R. Yates, P.J. Perry, and K.H. Andersen "Illicit Anabolic Steroid Use: A Controlled Personality Study," *Acta Psychiatrica Scand* 1990 (in press).

[23] Kirk J. Brower, M.D., "Rehabilitation for Anabolic-Androgenic Steroid Dependence," based on a paper presented at the National Consensus Meeting on Anabolic/Androgenic Steroids, in press, pp. 4-5.

[24] Brower, et al., "Anabolic-Androgenic Steroid Dependence", p. 31.

[25] Id.

overreliance on the body for self-worth is an element that differentiates anabolic steroid abusers from other drug abusers.[26]

Prominent surveys of male high school seniors who took steroids reveal similar perceptions. More than 50 percent of the users surveyed believed their strength to be above average. Only 27.8 percent of the nonusers felt their strength to be greater than average. Similarly, almost 40 percent of the users felt themselves to be in "excellent" health, compared to 24.1 percent of the nonusers.[27]

Several medical researchers warn that the current trend of anabolic steroid dependence is particularly troubling in adolescent athletes.[28] Adolescents are especially vulnerable to adverse effects because of their developing nervous and skeletal systems. Therefore, the psychological side effects may be intensified in the adolescent because he or she may not have the psychological maturity to cope with the mood changes associated with anabolic steroids.[29] At least one author has suggested that adolescent males may prove to be especially vulnerable to addiction, because its use is associated with low self-esteem, a characteristic common in adolescents.[30]

One study found a shocking attitude among adolescent habitual steroid users [31] who began taking anabolic steroids at a young age: when these users were asked if they would stop using anabolic steroids if it was "proven beyond a doubt" that they would lead to permanent sterility, liver cancer, and a heart attack, approximately 40 to 50 percent responded *that they would "definitely" continue to take anabolic steroids despite the health risks.*

The reported use of anabolic steroids suggests that there may be a psychological and physical basis for anabolic steroid dependence. Although physical dependence has been hyphothesized, few documented cases exist. One theory of physical dependence states that withdrawal symptoms are a response to lower levels of testosterone in the body after anabolic steroid use has stopped.[32] Another theory suggests that anabolic steroids increase opioids, or pleasure producing stimulants, that originate within the brain.

Psychological addiction to steroids includes the desire by some to become bigger and stronger. When an athlete watches his body size and strength decrease during withdrawal, his confidence and self-esteem decrease. Psychological addiction to anabolic steroids can be so severe that suicidal depression can occur during withdrawal. Experts warn that "close professional monitoring is required" during this period to avoid what they perceive to be "life-threatening" withdrawal symptoms.[33]

---

[26] Brower, "Rehabilitation", p. 2.

[27] Buckley, p. 3443.

[28] Wayne V. Moore, Ph.D., M.D., "Anabolic Steroid Use in Adolescence, *Journal of the American Medical Association* 260 (December 16, 1988): 3486; Windsor and Dimutru, p. 48; and Brower, et al., "Anabolic-Androgenic Steroid Dependence," p. 31.

[29] Brower et al., "Rehabilitation," p. 32.

[30] Wayne V. Moore, ibid., p. 3486.

[31] Charles E. Yesalis, et al., "Anabolic Steroid Use: Indications of Habituation Among Adolescents," *Journal of Drug Education* 19(2) (1989): 103-116.

[32] Brower, MD., "Rehabilitation," p. 9.

[33] Brower, "Rehabilitation," p. 10.

E. THE FAILURE OF CURRENT EFFORTS TO FIGHT STEROID ABUSE

Current enforcement efforts to control the misuse of steroids are clearly inadequate. Last year, the General Accounting Office conducted a year-long investigation into the steroid problem in America pursuant to the steroid provisions authored by Senator Biden in the 1988 Anti-Drug Abuse Act. Among the major findings in the GAO report is that the illegal steroids trade is a $300 million to $400 million a year industry.

Based on seizures of illicit drugs and other information, the Justice Department believes that the supply of black-market steroids is divided evenly between three sources: clandestine U.S. laboratories; imports smuggled into the United States from foreign countries; and diversions from legitimate U.S. steroid manufacturers.

The U.S. Food and Drug Administration is currently charged with the responsibility for enforcing steroids control laws. However, according to the FDA, only 38 full-time personnel were devoted to steroids enforcement efforts in 1988. In addition, FDA personnel have neither the expertise nor the authority to conduct the complex and time-consuming investigations that are necessary to attack the increasingly sophisticated illegal steroid trade. For example, FDA investigators are not authorized to carry firearms, execute search warrants, or conduct undercover investigations.

The current regulatory scheme is also inadequate to control the diversion of legally produced steroids into the illicit market. The GAO found the steroids-control system ripe for abuse:

> The FDA does not require manufacturers to submit information on the amount of steroids produced or sold in the United States.
>
> The FDA does not collect information on the amount of steroids legally prescribed by physicians.
>
> The FDA has no estimate of whether steroid production is increasing or decreasing, whether prescriptions have increased or decreased, nor the amount of diversion occurring in the steroid industry.

This is why S. 1829 is desperately needed legislation. Adding anabolic steroids to schedule II of the Controlled Substances Act would impose tight record-keeping and production controls on steroids. Steroids manufacturers and distributors will be required to comply with production and distribution regulations established by the Attorney General. For example, producers will be required to store steroids in secure facilities. Moreover, distributors will be required to keep detailed records on steroids shipments and make those records available to Drug Enforcement Administration investigators.

S. 1829 will also address the problem of clandestine steroids production and illegal steroids smuggling. By adding steroids to the list of schedule II controlled substances, the Steroid Trafficking Act of 1990 will give the Nation's lead drug-fighting agency—the Drug Enforcement Administration—the jurisdiction to investigate steroids-related offenses. Although DEA is already pressed in its fight against other illegal drug trafficking, DEA is better positioned to commit the resources and expertise necessary to mount an aggres-

sive national crackdown on steroid trafficking than are the handful of steroids personnel at the FDA.

In addition, adding steroids to schedule II will significantly increase the penalties for steroid offenses. Under current law, steroid dealers at most face up to 3 years imprisonment, regardless of the quantity involved. Under S. 1829, steroid pushers would face up to 20 years imprisonment and fines of up to $1 million. Similar penalties would apply to illegal steroids smuggling, under the Controlled Substances Import and Export Act (21 U.S.C. 961).

IV. Vote of the Committee

On March 8, 1990, the Committee on the Judiciary by unanimous consent approved an amendment in the nature of a substitute by Senators Biden and Thurmond to S. 1829, and ordered the bill, the Steroid Trafficking Act of 1990, as amended, favorably reported.

V. Text of S. 1829, as Reported

[101st Cong., 1st sess.]

A BILL To amend the Controlled Substances Act to further restrict the use of steroids and human growth hormones

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Steroid Trafficking Act of 1990".

TITLE I—ANABOLIC STEROIDS

SEC. 101. STEROIDS LISTED AS CONTROLLED SUBSTANCES.

(a) Adding Steroids to Schedule II of the Controlled Substances Act.—Subdivision (b) of schedule II of section 202(c) of the Controlled Substances Act (21 U.S.C. 812(c)) is amended by inserting at the end thereof the following:

"(22) Anabolic steroids.".

(b) Definition.—Section 102 of the Controlled Substances Act (21 U.S.C. 802) is amended by adding at the end thereof the following:

"(41) The term 'anabolic steroids' means—

"(A) any drug that is chemically and pharmacologically related to the male hormone testosterone and that promotes or purports to promote muscle growth, including any amount of the following chemical designations and their salts, esters, and isomers:

"(i) boldenone,

"(ii) chlorotestosterone,

"(iii) clostebol,

"(iv) dehydrochlormethyltestosterone,

"(v) dihydrotestosterone,

"(vi) drostanolone,

"(vii) ethylestrenol,

"(viii) floxymesterone,

"(ix) formabulone,

"(x) mesterolone,

"(xi) methandienone,

"(xii) methandranone,
"(xiii) methandriol,
"(xiv) methandrostenolone,
"(xv) methenolone
"(xvi) methyltestosterone,
"(xvii) mibolerne,
"(xviii) nandrolone,
"(xix) norethandrolone,
"(xx) oxandrolone,
"(xxi) oxymesterone,
"(xxii) oxymetholone,
"(xxiii) stanolone,
"(xxiv) stanozolol,
"(xxv) testolactone,
"(xxvi) testosterone,
"(xxvii) trenbolone, and

"(B) any substance which is purported, represented or labeled as being or containing any amount of any drug described in subparagraph (A), or any substance labeled as being or containing any such drug.

As used in schedule II, such term shall not include an anabolic steroid which is expressly intended for administration through implants to cattle or other nonhuman species and which has been approved by the Secretary of Health and Human Services for such administration, except that if any person prescribes, dispenses, or distributes such steroid for human use, such person shall be considered to have prescribed, dispensed, distributed a steroid in schedule II of this Act.".

(c) EFFECT OF SCHEDULING ON PRESCRIPTIONS.—Any prescription for anabolic steroids subject to refill on or after the date of enactment of the amendments made by this section may be refilled without restriction under section 309(a) of the Controlled Substances Act (21 U.S.C. 829(a)).

(d) EFFECTIVE DATE.—This section and the amendments made by this section shall take effect 90 days after the date of enactment of this Act.

SEC. 102. REGULATIONS BY ATTORNEY GENERAL.

(a) ABUSE POTENTIAL.—The Attorney General, upon the recommendation of the Secretary of Health and Human Services, shall, by regulation, exempt any compound, mixture, or preparation containing a substance in paragraph (41) of section 102 of the Controlled Substances Act (as added by section 101 of this Act) from the application of all or any part of the Controlled Substances Act if, because of its concentration, preparation, mixture or delivery system, it has no significant potential for abuse, and, at a minimum, shall exempt estrogens, progestins and corticosteroids.

(b) DRUGS FOR TREATMENT OF RARE DISEASES.—If the Attorney General finds that a drug listed in paragraph (41) of section 102 of the Controlled Substances Act (as added by section 101 of this Act) is—

(1) approved by the Food and Drug Administration as an accepted treatment for a rare disease or condition, as defined in

section 526 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360bb); and

(2) does not have a significant potential for abuse,

the Attorney General may exempt such drug from any production regulations otherwise issued under the Controlled Substances Act as may be necessary to ensure adequate supplies of such drug for medical purposes.

(c) DATE OF ISSUANCE OF REGULATIONS.—The Attorney General shall issue regulations implementing this section not later than 45 days after the date of enactment of this Act, except that the regulations required under subsection 102(a) shall be issued not later than 180 days after the date of enactment of this Act.

TITLE II—HUMAN GROWTH HORMONE

SEC. 201. AMENDMENT TO THE FOOD, DRUG AND COSMETIC ACT.

Section 303 of the Federal Food, Drug and Cosmetic Act (21 U.S.C. 333) is amended by inserting a new subsection (e) as follows:

"(e)(1) Except as provided in paragraph (2), whoever knowingly distributes, or possesses with intent to distribute, human growth hormone for any use in humans other than the treatment of a disease or other recognized medical condition pursuant to the order of a physician is guilty of an offense punishable by not more than 5 years in prison, such fines as are authorized by title 18, United States Code, or both.

"(2) Whoever commits any offense set forth in paragraph (1) and such offense involves an individual under 18 years of age is punishable by not more than 10 years imprisonment, such fines as are authorized by title 18, United States Code, or both.

"(3) Any conviction for a violation of paragraphs (1) and (2) of this subsection shall be considered a felony violation of the Controlled Substances Act for the purposes of forfeiture under section 413 of such Act.

"(4) As used in this subsection the term 'human growth hormone' means—

"(A) somatrem, somatropin, and any of their analogs; and

"(B) any substance which is purported, represented or labeled as being or containing any amount of any drug described in clause (A)(i), or any substance labeled as being or containing any such drug; and

"(5) The Drug Enforcement Administration is authorized to investigate offenses punishable by this subsection.".

SEC. 202. CONVICTION OF SECTION 303(e) OF THE FEDERAL FOOD, DRUG, AND COSMETIC ACT.

Section 2401 of the Anti-Drug Abuse Act of 1988 (Public Law 100-690; 102 Stat. 4181) is repealed.

VI. SECTION-BY-SECTION ANALYSIS

Section 1 sets forth the short title of the bill as the "Steroid Trafficking Act of 1990."

TITLE I—ANABOLIC STEROIDS

Section 101(a) adds anabolic steroids to schedule II of the Controlled Substances Act (21 U.S.C. 812(c)), the same schedule under which cocaine and opium are controlled. The Controlled Substances Act sets forth specific criteria to determine under what schedule a specific substance should be controlled. The criteria for placing a substance under schedule II include:

(a) The drug or other substance has a high potential for abuse.

(b) The drug or other substance has a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions.

(c) Abuse of the drug or other substance may lead to severe psychological and physical dependence.

The committee believes that steroids satisfy each of the criteria for control under schedule II. First, steroids have a high potential for abuse. An estimated 1 million Americans use anabolic steroids for nonmedical reasons; 500,000 of these users are highschool children. Second, steroids are indicated for the treatment of certain medical conditions, including specific forms of anemia and reproductive disorders. The committee notes, however, that with the development of new drugs and given the harmful side effects associated with steroids therapy, steroids are the primary or favored pharmacological treatment for a decreasing number of medical disorders. Finally, steroid abuse may lead to severe psychological and physical dependence. As noted in the discussion section, numerous medical and public health experts have found that steroids can lead to severe psychological addiction. For example, Dr. Charles Yesalis, a leading steroids expert at Penn State University, found that 40 percent of the male high school students who use steroids were "hard-core" users. A limited number of studies have also linked steroids abuse to physical dependence. The committee concludes that the abuse potential of steroids is similar to that of cocaine hydrochloride and other so-called hard drugs, and that steroids should be regulated under the safeguards and controls of schedule II substances.

Section 101(b) creates a new subsection (41) of section 102 of the Controlled Substances Act (21 U.S.C. 802), which provides a new definition for "anabolic steroids." To be classified as an anabolic steroid, and drug must be both chemically and pharmacologically related to the male hormone testosterone, and the drug must promote or purport to promote muscle growth. Section 101(b) contains a list of 27 chemicals that are to be considered anabolic steroids under the Controlled Substances Act. The list, however, is not exclusive. Any drug that meets the general definition is paragraph (A) of the new subsection (41), except human growth hormone and subject to the exemptions specified in section 102 of the bill, shall be considered an anabolic steroid. Paragragh (B) of the new subsection (41) expressly provides that counterfeit drugs that are purported, represented or labeled as containing any amount of a drug described in paragraph (A) shall be considered anabolic steroids. However, the term anabolic steroid does not include anabolic steroids that are expressly intended for use in animals and approved for

such purposes by the Secretary of Health and Human Services, unless the drug is distributed for human use. In these circumstances, the drug would be considered an anabolic steroid under schedule II.

Section 101(c) sets forth an exemption under section 309(a) of the Controlled Substances Act for prescripitons subject to refill on or after the date of enactment of section 101 of the bill.

Section 101(d) provides that the effective date of section 101 shall be 90 days after the date of enactment. The committee believes that this period provides sufficent time for Federal agencies to implement their responsibilities under this act and for private industry to come into compliance with the requirements of this act.

Section 102(a) requires the Attorney General to issue regulations that exempt any compound, mixture or preparation containing a substance in the new paragraph (41) from the application of the Controlled Substances Act if, because of its concentration, preparation, mixture or delivery system, has no significant potential for abuse. The Attorney General shall base such exemptions on the recommendation of the Secretary of Health and Human Services. At a minimum, section 102(a) authorizes and directs the Attorney General to issue regulations that exempt estrogens, progenstins and corticosteroids from the application of the Controlled Substances Act. These substances shall not be considered anabolic steroids under the new paragraph (41) of section 102 of the Controlled Substances Act. The committee recognizes that many compounds, mixtures and preparations that contain steroids have no abuse potential, such as oral contraceptives. Although these substances shall not be controlled under the Controlled Substances Act, they will continue to be regulated under the provisions of the Federal Food, Drug and Cosmetic Act.

Section 102(b) authorizes the Attorney General to exempt any substance under the new paragraph (41) and any production regulations otherwise issued under the Controlled Substances Act as may be necessary to ensure adequate supplies of such drug for medical purposes. The Attorney General however, may only exempt substances that meet the following criteria: (1) the substance must be accepted treatment for a rare disease or condition; and (2) the substance must have no significant potential for abuse. The committee is concerned that the significant costs associated with the production controls imposed on schedule II drugs may make the production of steroids related-drugs for rare diseases excessively expensive to patients or lead pharmaceutical firms, to stop production entirely. Section 102(b) is intended to balance the need to ensure adequate medical supplies of such drugs with the need to prevent the abuse of anabolic steroids, particularly among young people.

Section 102(c) provides that the regulations required under section 102(a) shall be issued not later than 180 days after the date of enactment. The regulations required under subsection (b) shall be issued not later than 45 days after the date of enactment.

TITLE II—HUMAN GROWTH HORMONE

Section 201 amends the Federal Food, Drug and Cosmetic Act (21 U.S.C. 333) to create a felony offense for trafficking in human growth hormone (HGH). Given the separate regime established under title II to control illegal HGH distribution, HGH shall not be considered an anabolic steroid under title I. Specifically, section 201 creates a new subsection 303(e) of the Food, Drug and Cosmetic Act to make it a felony punishable by up to 5 years imprisonment for knowingly distributing, or possessing with intent to distribute, HGH for any use in humans other than the treatment of a disease or other recognized medical condition pursuant to the order of a physican. Paragraph (2) of the new subsection 333(e) of the Food, Drug and Cosmetic Act doubles the penalty for illegally distributing HGH to any person under the age of 18.

The new paragraph (3) authorizes Federal law enforcement agencies to seize and forfeit the proceeds and instrumentalities of illegal HGH distribution in the same manner and under the same procedures as authorized under section 413 of the Controlled Substances Act.

The new paragraph (4) sets forth the definition of "human growth hormone." HGH is defined as somatrem, somatropin and any analog of these substances. The definition also includes any substance that is purported, represented or labeled as being or containing any amount of HGH.

The new paragraph (5) authorizes the Drug Enforcement Administration to investigate violations involving the illegal distribution or possession of HGH and to pursue forfeiture actions under paragraph (3). Given the close link between illegal sales of anabolic steroids and HGH, this provision is needed to ensure that DEA has full authority to investigate and arrest persons for illegal distribution or possession of HGH.

Section 202 repeals section 2401 of the Anti-Drug Abuse Act. This subsection is no longer necessary, given the new and tighter restrictions and penalties contained in titles I and II of this bill.

VII. Cost Estimate

U.S. Congress,
Congressional Budget Office,
Washington, DC, March 20, 1990.

Hon. Joseph R. Biden, Jr.,
Chairman, Committee on the Judiciary,
U.S. Senate, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has reviewed S. 1829, the Steroid Trafficking Act of 1990, as ordered reported by the Senate Committee on the Judiciary, March 8, 1990.

CBO estimates that S. 1829, if enacted, would increase costs to the federal government by roughly $250,000 annually, assuming appropriation of the necessary funds. This estimate is based on information provided by the Drug Enforcement Administration (DEA) and the Food and Drug Administration (FDA). S. 1829 would amend the Controlled Substances Act to define certain anabolic steroids as controlled substances. The bill would also modify the

criminal penalties for illegally distributing human growth hormone.

Under this bill, the DEA would have primary responsibility for regulating these substances; the FDA has this responsibility under current law. CBO expects that the DEA would need roughly $250,000 annually to issue regulations required by the bill and maintain records in accordance with its regulatory responsibilities under the Controlled Substances Act. If the DEA were also to undertake an active investigatory and enforcement role, costs would be higher. There would be no significant offsetting change in costs to the FDA, because that agency spends little for this purpose.

Enactment of this bill would not affect the budgets of state or local governments.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Michael Sieverts, who can be reached at 226–2860.

Sincerely,

ROBERT F. HALE,
(For Robert D. Reischauer).

VIII. REGULATORY IMPACT STATEMENT

In compliance with subsection (b) of paragraph 11 of rule XXVI of the Standing Rules of the Senate, the committee finds that the bill would have a limited regulatory impact.

Manufacturers, producers and distributors of steroids will be required to meet the record-keeping and production control requirements for schedule II controlled substances. These requirements include: registering with the Drug Enforcement Administration; storing and producing steroids in secure facilities; acquiring a production or distribution quota from DEA; and compiling and maintaining records on shipments of steroids. Since DEA already has promulgated regulations concerning the manufacture, production and distribution of schedule II controlled substances, only minor modifications or additions should be required to cover the addition of steroids to schedule II.

The bill requires the Attorney General to issue two specific sets of regulations. Section 102(a) of the bill requires the Attorney General to promulgate regulations to exempt any compound, mixture, or preparation containing a steroid if, because of its concentration, preparation, mixture or delivery system, it has no significant potential for abuse. Section 102(b) requires the Attorney General to issue regulations that exempt certain drugs in the new paragraph (41) of section 102 of the Controlled Substances Act from any production regulations as may be necessary to ensure adequate supplies of the drug for medical purposes. According to the Congressional Budget Office, the cost of issuing the regulations necessary and required under the bill is approximately $250,000.

IX. CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by S. 1829, as reported, are shown as follows (existing law proposed to be omitted

is enclosed in black brackets; new matter is printed in italic, existing law in which no change is proposed is shown in roman):

UNITED STATES CODE

TITLE 21—FOOD AND DRUGS

* * * * * * *

CHAPTER 9—FEDERAL FOOD, DRUG, AND COSMETIC ACT

* * * * * * *

§ 333. Penalties.

* * * * * * *

(d) EXCEPTIONS INVOLVING MISBRANDED FOOD.—No person shall be subject to the penalties of subsection (a) of this section for a violation of section 331 of this title involving misbranded food if the violation exists solely because the food is misbranded under section 343(a)(2) of this title because of its advertising, and no person shall be subject to the penalties of subsection (b) of this section for such a violation unless the violation is committed with the intent to defraud or mislead.

(e) ANABOLIC STEROIDS.—[(1) Except as provided in paragraph (2), any person who distributes or possesses with the intent to distribute any anabolic steroid for any use in humans other than the treatment of disease pursuant to the order of a physician shall be imprisoned for not more than three years or fined under title 18, United States Code, or both.

[(2) Any person who distributes or possesses with the intent to distribute to an individual under 18 years of age, any anabolic steroid for any use in humans other than the treatment of disease pursuant to the order of a physician shall be imprisoned for not more than six years or fined under title 18, United States Code, or both.] *(1) Except as provided in paragraph (2), whoever knowingly distributes, or possesses with intent to distribute, human growth hormone for any use in humans other than the treatment of a disease or other recognized medical condition pursuant to the order of a physician is guilty of an offense punishable by not more than 5 years in prison, such fines as are authorized by title 18, United States Code, or both.*

(2) Whoever commits any offense set forth in paragraph (1) and such offense involves an individual under 18 years of age is punishable by not more than 10 years imprisonment, such fines as are authorized by title 18, United States Code, or both.

(3) Any conviction for a violation of paragraphs (1) and (2) of this subsection shall be considered a felony violation of the Controlled Substances Act for the purposes of forfeiture under section 413 of such Act.

(4) As used in this subsection the term "human growth hormone" means—

(A) somatrem, somatropin, and any of their analogs; and

(B) any substance which is purported, represented or labeled as being or containing any amount of any drug described in clause (A)(i), or any substance labeled as being or containing any such drug; and

(5) The Drug Enforcement Administration is authorized to investigate offenses punishable by this subsection.

* * * * * * *

CHAPTER 13—DRUG ABUSE PREVENTION AND CONTROL

* * * * * * *

§ 802. Definitions.

* * * * * * *

(40) The term "chemical mixture" means a combination of two or more chemical substances, at least one of which is not a listed precursor chemical or a listed essential chemical, except that such term does not include any combination of a listed precursor chemcial or a listed essential chemical with another chemical that is present solely as an impurity.

(41) The term "anabolic steroids" means—

(A) any drug that is chemically and pharmacologically related to the male hormone testosterone and that promotes or purports to promote muscle growth, including any amount of the following chemical designations and their salts, esters, and isomers:

(i) boldenone,
(ii) chlorotestosterone,
(iii) clostebol,
(iv) dehydrochlormethyltestosterone,
(v) dihydrotestosterone,
(vi) drostanolone,
(vii) ethylestrenol,
(viii) fluoxymesterone,
(ix) formobulone,
(x) mesterolone,
(xi) methandienone,
(xii) methandranone,
(xiii) methandriol,
(xiv) methandrostenolone,
(xv) methenolone,
(xvi) methyltestosterone,
(xvii) mibolerone,
(xviii) nandrolone,
(xix) norethandrolone,
(xx) oxandrolone,
(xxi) oxymesterone,
(xxii) oxymetholone,
(xxiii) stanolone,
(xxiv) stanozolol,
(xxv) testolactone,
(xxvi) testosterone,
(xxvii) trenbolone, and

(B) any substance which is purported, represented or labeled as being or containing any amount of any drug described in subparagraph (A), or any substance labeled as being or containing any such drug.

As used in schedule II, such term shall not include an anabolic steroid which is expressly intended for administration through implants to cattle or other nonhuman species and which has been approved by the Secretary of Health and Human Services for such administration, except that if any person prescribes, dispenses, or distributes such steroid for human use, such person shall be considered to have prescribed, dispensed, or distributed a steroid in schedule II of this Act.

* * * * * * *

§ 812. Schedules of controlled substances.

* * * * * * *

Schedule II

(a) Unless specifically excepted or unless listed in another schedule, any of the following substances whether produced directly or indirectly by extraction from substances of vegetable origin, or independently by means of chemical synthesis, or by a combination of extraction and chemical synthesis:

(1) Opium and opiate, and any salt, compound, derivative, or preparation of opium or opiate.

(2) Any salt, compound, derivative, or preparation thereof which is chemically equivalent or identical with any of the substances referred to in clause (1), except that these substances shall not include the isoquinoline alkaloids of opium.

(3) Opium poppy and poppy straw.

(4) Coca leaves and any salt, compound, derivative, or preparation of coca leaves, and any salt, compound, derivative, or preparation thereof which is chemically equivalent or identical with any of these substances, except that the substances shall not include decocainized coca leaves or extraction of coca leaves, which extractions do not contain cocaine or ecgonine.

(b) Unless specifically excepted or unless listed in another schedule, any of the following opiates, including their isomers, esters, ethers, salts, and salts of isomers, esters and ethers, whenever the existence of such isomers, esters, ethers, and salts is possible within the specific chemical designation:

(1) Alphaprodine.
(2) Anileridine.
(3) Bezitramide.
(4) Dihydrocodeine.
(5) Diphenoxylate.
(6) Fentanyl.
(7) Isomethadone.
(8) Levomethorphan.
(9) Levorphanol.
(10) Metazocine.
(11) Methadone.

(12) Methadone-Intermediate, 4-cyano-2-dimethylamino-4, 4-diphenyl butane.
(13) Moramide-Intermediate, 2-methyl-3-morpholino-1, 1-diphynylpropane-carboxylic acid.
(14 Pethidine.
(15) Pethidine-Intermediate-A, 4-cyano-1-methyl-4-phenylpiperidene.
(16) Pethidine-Intermediate-B, ethyl-4-phenylpiperidine-4-carboxylate.
(17) Pethidine-Intermediate-C, 1-methyl-4-phenylpiperidene 4-carboxylic acid.
(18) Phenazocine.
(19) Piminodine.
(20) Racemethorphan.
(21) Racemorphan.
(22) Anabolic steroids.

* * * * * * *

ANTI-DRUG ABUSE ACT OF 1989

(Public Law 100-690)

* * * * * * *

TITLE I—COORDINATION OF NATIONAL DRUG POLICY

* * * * * * *

Subtitle E—Provisions Relating to Certain Drugs

[SEC. 2401. FORFEITURE AND ILLEGAL TRAFFICKING IN STEROIDS.

[Any conviction for a violation of section 303(e) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 333(e)), or any other provision of that Act, involving an anabolic steroid or a human growth hormome shall be considered, for purposes of section 413 of the Controlled Substances Act (21 U.S.C. 853), a conviction for a violation of title II of the Comprehensive Drug Abuse Prevention and Control Act of 1970, if such violation of the Federal Food, Drug, and Cosmetic Act is punishable by imprisonment for more than one year.]

* * * * * * *

X. APPENDIX: JUDICIARY COMMITTEE HEARINGS ON STEROID ABUSE IN AMERICA

MONDAY, APRIL 3, 1989

NEWARK, DELAWARE

Evelyn Ashford, two-time U.S. Olympic gold medalist.
Pat Connolly, former U.S. Olympian and track coach.
Diane Williams, former U.S. national 100-meter champion.
Pat Croce, conditioning trainer, Philadelphia 76ers and Philadelphia Flyers.
Mike Quick, all-pro NFL wide receiver and captain, Philadelphia Eagles.
Otho Davis, head trainer, Philadelphia Eagles; executive director, National Athletic Trainers Association.
Dorothy Baker, Delaware representative to the Executive Board, U.S. Olympic Committee.
Dr. Charles Yesalis, professor, Pennsylvania State University.
Dr. David Katz, faculty member, Harvard Medical School.
Dr. Edward L. Langston, American Medical Association.

TUESDAY, MAY 9, 1989

WASHINGTON, D.C.

Pete Rozelle, NFL commissioner.
Chuck Noll, head coach, Pittsburgh Steelers.
Marty Schottenheimer, head coach, Kansas City Chiefs.
Jay Moyer, NFL executive vice president and legal counsel.
Gene Upshaw, exective director, NFL Players Association.
Bill Fralic, three-time all-pro offensive lineman, Atlanta Falcons, NFL player representative for the Falcons.
Steve Courson, former NFL player, Pittsburgh Steelers and Tampa Bay Buccaneers.
Harold Raymond, head coach, University of Delaware.
Joe Paterno, head coach, Penn State University.
Bo Schembechler, head football coach and athletic director, University of Michigan.
Joe Purzycki, head coach, James Madison University.

○